

March 18, 2004

U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Mail Stop P1-137
Washington, DC 20555-0001

ULNRC04964



Ladies and Gentlemen:

**DOCKET NUMBER 50-483
CALLAWAY PLANT UNIT 1
UNION ELECTRIC CO.
FACILITY OPERATING LICENSE NPF-30
LICENSEE EVENT REPORT 2004-002-00
Reactor trip due to faulty electrical relay.**

The enclosed licensee event report is submitted in accordance with 10CFR50.73(a)(2)(iv)(A) to report a reactor trip that occurred as a result of a faulty electrical relay located in the main electrical generator protection circuitry.

Sincerely,

A handwritten signature in cursive script that reads "Warren A. Witt".

Warren A. Witt
Manager, Callaway Plant

WAW/EWH/slk

Enclosure

IE22

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Mr. Bruce S. Mallett
Regional Administrator
U.S. Nuclear Regulatory Commission
Region IV
611 Ryan Plaza Drive, Suite 400
Arlington, TX 76011-4005

Senior Resident Inspector
Callaway Resident Office
U.S. Nuclear Regulatory Commission
8201 NRC Road
Steedman, MO 65077

Mr. Jack N. Donohew (2 copies)
Licensing Project Manager, Callaway Plant
Office of Nuclear Reactor Regulation
U. S. Nuclear Regulatory Commission
Mail Stop 7E1
Washington, DC 20555-2738

Missouri Public Service Commission
Governor Office Building
200 Madison Street
PO Box 360
Jefferson City, MO 65102-0360

Records Center
Institute of Nuclear Power Operations
700 Galleria Parkway
Atlanta, GA 30339

LICENSEE EVENT REPORT (LER)

(See reverse for required number of
digits/characters for each block)

Estimated burden per response to comply with this mandatory information collection request: 50 hours. Reported lessons learned are incorporated into the licensing process and fed back to industry. Send comments regarding burden estimate to the Records Management Branch (T-6 E6), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by Internet e-mail to bjs1@nrc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202 (3150-0104), Office of Management and Budget, Washington, DC 20503. If a means used to impose information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.

1. FACILITY NAME

CALLAWAY PLANT UNIT 1

2. DOCKET NUMBER

05000 483

3. PAGE

1 OF 3

4. TITLE

Reactor trip due to faulty electrical relay.

5. EVENT DATE

MO	DAY	YEAR
1	27	2004

6. LER NUMBER

YEAR	SEQUENTIAL NUMBER	REV NO
2004	- 002	- 00

7. REPORT DATE

MO	DAY	YEAR
3	18	2004

8. OTHER FACILITIES INVOLVED

FACILITY NAME

DOCKET NUMBER

05000

FACILITY NAME

DOCKET NUMBER

05000

9. OPERATING
MODE

1

10. POWER
LEVEL

100

11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR *: (Check all that apply)

20.2201(b)

20.2203(a)(3)(ii)

50.73(a)(2)(ii)(B)

50.73(a)(2)(ix)(A)

20.2201(d)

20.2203(a)(4)

50.73(a)(2)(iii)

50.73(a)(2)(x)

20.2203(a)(1)

50.36(c)(1)(i)(A)

X 50.73(a)(2)(iv)(A)

73.71(a)(4)

20.2203(a)(2)(i)

50.36(c)(1)(ii)(A)

50.73(a)(2)(v)(A)

73.71(a)(5)

20.2203(a)(2)(ii)

50.36(c)(2)

50.73(a)(2)(v)(B)

OTHER

20.2203(a)(2)(iii)

50.46(a)(3)(ii)

50.73(a)(2)(v)(C)

Specify in Abstract below or in
NRC Form 366A

20.2203(a)(2)(iv)

50.73(a)(2)(i)(A)

50.73(a)(2)(v)(D)

20.2203(a)(2)(v)

50.73(a)(2)(i)(B)

50.73(a)(2)(vii)

20.2203(a)(2)(vi)

50.73(a)(2)(i)(C)

50.73(a)(2)(viii)(A)

20.2203(a)(3)(i)

50.73(a)(2)(ii)(A)

50.73(a)(2)(viii)(B)

12. LICENSEE CONTACT FOR THIS LER

NAME

Mark A. Reidmeyer

TELEPHONE NUMBER (Include Area Code)

(573) 676-4306

13. COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT

CAUSE	SYSTEM	COMPONENT	MANU- FACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANU- FACTURER	REPORTABLE TO EPIX
X	TB	21	W351	Y					

14. SUPPLEMENTAL REPORT EXPECTED

YES (If yes, complete EXPECTED SUBMISSION DATE)	X	NO
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15. EXPECTED
SUBMISSION

MONTH

DAY

YEAR

16. ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines)

At 1830, 1/27/04, while at 100 percent power, Callaway Plant experienced a main electrical generator trip which in turn caused a reactor trip due to power being above 50 percent. The cause of the generator trip was a failed electrical relay. This relay was designed to sense remote faults in order to prevent exceeding thermal limits for the stator windings. Plant systems responded as designed, including automatic actuation of the auxiliary feedwater system.

The faulted relay was repaired, calibrated, and reinstalled. This relay contained a second set of unused contacts which were used instead of the initial faulted contacts. This relay configuration was successfully retested and plant operation resumed without further problems.

A review of relevant operating experience did not identify similar failures, and a review of past plant preventative maintenance did not reveal abnormalities. Preventive maintenance procedures will be revised to provide additional detailed instructions for inspection of these relay contacts for this failure mechanism.

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)	DOCKET (2) NUMBER (2)	LER NUMBER (6)			PAGE (3)
Callaway Plant Unit 1	05000483	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	2 OF 3
		2004	- 002	- 00	

NARRATIVE (If more space is required, use additional copies of NRC Form 366A) (17)

I. DESCRIPTION OF THE REPORTABLE EVENT

A. REPORTABLE EVENT CLASSIFICATION

This event is being reported per 10CFR50.73(a)(2)(iv)(A), system actuation. Both the Reactor Protection System (RPS) and PWR auxiliary feedwater systems were actuated during this event.

B. PLANT OPERATING CONDITIONS PRIOR TO THE EVENT

Callaway Plant was in Mode 1 at 100 percent power.

C. STATUS OF STRUCTURES, SYSTEMS OR COMPONENTS THAT WERE INOPERABLE AT THE START OF THE EVENT AND THAT CONTRIBUTED TO THE EVENT

"B" Containment Spray pump, PEN01B, was inoperable due to planned maintenance when the reactor trip occurred. The unavailability of PEN01B did not contribute to this event.

D. NARRATIVE SUMMARY OF THE EVENT, INCLUDING DATES AND APPROXIMATE TIMES

At 1830, 1/27/04, while at 100 percent power, Callaway Plant experienced a main electrical generator trip which in turn caused a reactor trip due to power being above the P-9 setpoint of 50 percent power. Plant systems actuated per design. Plant operators responded to the reactor trip using plant procedures and stabilized the unit in Mode 3 at normal operating temperature and pressure.

The cause of the generator trip was a failed 321G relay contact. The 321G relay (Manufacturer: Westinghouse Elec. Corp.—Nuclear Energy Services, Model KD-11) is a distance relay which is connected to main generator current and voltage circuits. This relay was designed to sense remote faults in order to prevent exceeding thermal limits for the stator windings. A defective relay contact shorted, and resulted in actuation of the main generator lockout relays and tripping of the main generator output breakers, MDV53 and MDV55. The actuation of the main generator lockout relays generated the main turbine trip, and resulted in a reactor trip. The faulted relay was repaired using a second set of unused contacts, calibrated, and reinstalled. This relay configuration was successfully retested and plant operation resumed without further problems.

A review of relevant operating experience did not identify similar failures, and a review of past plant preventative maintenance did not reveal abnormalities. Preventive maintenance procedures will be revised to provide additional detailed instructions for inspection of these relay contacts for this failure mechanism.

E. METHOD OF DISCOVERY OF EACH COMPONENT, SYSTEM FAILURE, OR PROCEDURAL ERROR

Troubleshooting performed using planned work documents determined that the cause of the plant trip was a failed 321G relay contact. The 321G is a distance relay which is connected to main generator current and voltage circuits.

LICENSEE EVENT REPORT (LER)

FACILITY NAME (1)	DOCKET (2) NUMBER (2)	LER NUMBER (6)			PAGE (3)
Callaway Plant Unit 1	05000483	YEAR	SEQUENTIAL NUMBER	REVISION NUMBER	3 OF 3
		2004	- 002	- 00	

NARRATIVE (If more space is required, use additional copies of NRC Form 366A) (17)

II. EVENT DRIVEN INFORMATION

A. SAFETY SYSTEMS THAT RESPONDED

All safety systems responded as expected. When the reactor trip occurred, "B" Containment Spray pump, PEN01B, was out of service due to planned maintenance. The unavailability of PEN01B had no impact on this event.

B. DURATION OF SAFETY SYSTEM INOPERABILITY

Not applicable to this event.

C. SAFETY CONSEQUENCES AND IMPLICATIONS OF THE EVENT.

- Based on the Conditional Core Damage Probability (CCDP) for this event being less than 1E-6, this event is of very low risk significance.

III. CAUSE OF THE EVENT

Troubleshooting performed using planned work documents determined that the cause of the plant trip was a failed 321G relay contact. The 321G is a distance relay which is connected to main generator current and voltage circuits. This relay was designed to sense remote faults in order to prevent exceeding thermal limits for the stator windings. A defective relay contact shorted, and resulted in actuation of the main generator lockout relays and tripping of the main generator output breakers, MDV53 and MDV55. The actuation of the main generator lockout relays generated the main turbine trip, and resulted in a reactor trip.

IV. CORRECTIVE ACTIONS

Preventive maintenance procedures will be revised to provide additional detailed instructions for inspection of these relay contacts for this failure mechanism.

V. PREVIOUS SIMILAR EVENTS

A review was conducted of the Callaway Action Request System (CARS) and no additional failures of this relay were discovered. This event is described in Callaway Action Request (CAR) 200400629.

A review of Callaway LERs from 2000 until present did not reveal any similar events.

VI. ADDITIONAL INFORMATION

The system and component codes listed below are from the IEEE Standard 805-1984 and IEEE Standard 803A-1984 respectively.

System: TB

Component: 21